

Claim 5. (Amended) The membrane of Claim 1 wherein said perfluorinated thermoplastic polymer is poly(tetrafluoroethylene-co-perfluoro(alkylvinylether)) or poly(tetrafluoroethylene-co-hexafluoropropylene).

Claim 6. (Original) The membrane of Claim 5, wherein the alkyl of said poly(tetrafluoroethylkene-co-perfluoro(alkylvinylether)) is propyl, methyl, or blends of methyl and propyl.

Claim 7 (Canceled) A method of producing a hollow fiber porous membrane from a perfluorinated thermoplastic polymer having an essentially skinless surface on at least one surface comprising:

(a) dissolving said perfluorinated thermoplastic polymer in a solvent that forms an upper critical solution temperature solution with said polymer,

(b) extruding said solution through an annular die, a portion of said die being submerged in a cooling bath, and maintained at a temperature sufficiently high to prevent said solution from prematurely cooling,

(c) extruding said solution into said cooling bath,

(d) cooling said solution to below the upper critical solution temperature to cause separation into two phases by liquid-liquid phase separation, said phases being a polymer rich solid phase, and a solvent rich liquid phase, to form a gel fiber,

(e) extracting said solvent from said gel fiber to form a porous hollow fiber membrane,

(f) drying said porous hollow fiber membrane under restraint.

Claim 8. (Canceled) The method of Claim 7 wherein said portion of said die being submerged is the die tip.

Claim 9. (Canceled) The method of Claim 7 wherein said perfluorinated thermoplastic polymer is dissolved in a concentration of from about 12% to about 35% by weight in a solvent that forms an upper critical solution temperature solution with said polymer.

Claim 10. (Canceled) The method of Claim 7 wherein step (b) comprises extruding said solution in an essentially horizontal attitude through an annular die, said die maintained at a temperature sufficiently high to prevent said solution from prematurely cooling, wherein the tip of said die penetrates through a wall separating said the body of said die from cooling bath, exposing the die exit to said cooling bath liquid.

Claim 11. (Canceled) The method of Claim 7 wherein the solvent has a boiling point lower than the temperature of the gel fiber at the die tip exit.

Claim 12. (Canceled) The method of Claim 7 wherein the solvent is a low molecular weight saturated chlorotrifluorohydrocarbon polymer.

Claim 13. (Canceled) The method of Claim 13 wherein the solvent is HaloVac® 56 or blends thereof.

Claim 14. (Canceled) The method of Claim 7 wherein said perfluorinated thermoplastic polymer is poly(tetrafluoroethylene-co-perfluoro(alkylvinylether)) or poly(tetrafluoroethylene-co-hexafluoropropylene).

Claim 15. (Canceled) The method of Claim 14 wherein the alkyl of said poly(tetrafluoroethylene-co-perfluoro(alkylvinylether)) is propyl, methyl, or of blends of methyl and propyl.

Claim 16. (Canceled) The method of Claim 7 wherein said cooling bath liquid consists of a non-solvent for said perfluorinated thermoplastic polymer.

Claim 17. (Canceled) The method of Claim 14 wherein said cooling bath liquid consists of a non-solvent for said perfluorinated thermoplastic polymer.

Claim 18. (Canceled) The method of Claim 7 wherein said cooling bath liquid consists of the group selected from silicone oil or dioctylphthalate.

Claim 19. (Canceled) The method of Claim 14 wherein said cooling bath liquid consists of the group selected from silicone oil or dioctylphthalate.

Claim 20. (Canceled) A hollow fiber porous membrane produced from a perfluorinated thermoplastic polymer having an essentially skinless surface on at

least one surface, and a IPA flow time of less than about 3000 seconds produced by the method of Claim 7.

Claim 21. (Canceled) The membrane of Claim 20 wherein said membrane is asymmetric.

Claim 22. (Canceled) The membrane of Claim 20 wherein said perfluorinated thermoplastic polymer is selected from the group consisting of poly(tetrafluoroethylene-co-perfluoro(alkylvinylether)) or poly(tetrafluoroethylene-co-hexafluoropropylene).

Claim 23. (Canceled) The membrane of Claim 22 wherein the alkyl of said poly(tetrafluoroethylene-co-perfluoro(alkylvinylether)) is selected from the group consisting of essentially all propyl, of essentially all methyl, or blends of methyl and propyl.

Claim 24. (Amended) A hollow fiber contactor membrane made of a perfluorinated thermoplastic comprising a porous surface on both diameters.

Claim 25. (Amended) The membrane of Claim 24 wherein said perfluorinated thermoplastic polymer is selected from the group consisting of poly(tetrafluoroethylene-co-perfluoro(alkylvinylether)) and poly(tetrafluoroethylene-co-hexafluoropropylene).

Claim 26. (Amended) The membrane of Claim 25 wherein the alkyl of said poly(tetrafluoroethylene-co-perfluoro(alkylvinylether)) is selected from the group consisting of propyl, methyl, and blends of methyl and propyl.

Claim 27. (Amended) A hollow fiber contactor membrane made of perfluorinated thermoplastic comprising an unskinned surface both diameters capable of liquid-gas mass transfer with a Sherwood number equal to about 1.64 times the Graetz number to the 0.33 power in Graetz numbers of from about 5 to about 1000.

Claim 28. (Amended) The membrane of Claim 26 wherein said perfluorinated thermoplastic polymer is selected from the group consisting of

Cheng et al
U.S. Serial No. 07/206,109
Amendment

page five


poly(tetrafluoroethylene-co-perfluoro(alkylvinylether)) and
poly(tetrafluoroethylene-co-hexafluoropropylene).

Claim 29. (Amended) The membrane of Claim 27 wherein the alkyl of
said poly(tetrafluoroethylene-co-perfluoro(alkylvinylether)) is selected from the
group consisting of propyl, methyl, and blends of methyl and propyl.

REMARKS

Pursuant to a telephone interview between applicant's attorney, the
undersigned and Examiner Fortuna, applicants elect the product claims 1-6 and
24-29 without traverse. Process Claims 7-23 have been canceled and will be the
subject of a divisional application.

Respectfully submitted,

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